**Ten+ Effective Research-Based Instructional Strategies\***

Marzano (2000) identified ten research-based, effective instructional strategies that cut across all content areas and all grade levels. Each requires specific implementation techniques to produce the effect sizes reported, so their use **requires learning to use them correctly.**

Researchers at Mid-Continent Research for Education and Learning (McREL) have identified 9 instructional strategies “that have a high probability of enhancing student achievement for all students in all subject areas at all grade levels.” These research-based instructional strategies (RBIS) are explained in the book, **Classroom Instruction That Works**, ASCD, 2001, by Robert J. Marzano, Debra J. Pickering, and Jane E. Pollock.

The first 9 are listed in order of highest to lowest average effect size (actually #10 is greatest es), the RBIS are:

**1. Vocabulary**. Research indicates that student achievement will increase by 12 percentile points when students are taught 10-12 words a week; 33 percentile points when vocabulary is focused on specific words important to what students are learning. Requires specific approaches. (Effect size=0.95 or 32 percentile points)

**2. IDENTIFYING SIMILARITIES & DIFFERENCES (pp. 13-28)**

The ability to break a concept into its similar and dissimilar characteristics allows students to understand (and often solve) complex problems by analyzing them in a more simple way. Researchers have found these mental operations to be basic to human thought. Indeed, they might be considered the “core” of all learning. Four ways to identify similarities and differences are (1) comparing, (2) classifying, (3) creating metaphors, and (4) creating analogies.

**3. SUMMARIZING & NOTE TAKING (pp. 29-48)**

These skills promote greater comprehension by asking students to analyze a subject to expose what’s essential and then put it in their own words. According to research, this requires (1) substituting, (2) deleting, (3) keeping some things, and (4) having an awareness of the basic structure of the information presented. Research shows that taking more notes is better than fewer notes, though verbatim note taking is ineffective because it does not allow time to process the information. Teachers should encourage and give time for review and revision of notes. Notes can be the best study guides for tests.

**4. REINFORCING EFFORT & PROVIDING RECOGNITION (pp. 49-59)**

Effort and recognition speak to the attitudes and beliefs of students, and teachers must show the connection between effort and achievement. Research shows that although not all students realize the importance of effort, they can learn to change their beliefs to emphasize effort. According to research, recognition is most effective if it is contingent on the achievement of a certain standard. Also, symbolic recognition works better than tangible rewards.

**5. HOMEWORK & PRACTICE (pp. 60-71)**

Homework provides students with the opportunity to extend their learning outside the classroom. However, research shows that the amount of homework assigned should vary by grade level and that parent involvement should be minimal. Teachers should explain the purpose of homework to both the student and the parent or guardian, and teachers should try to give feedback on all homework assigned. Research shows

that students should adapt skills while they’re learning them. Speed and accuracy are key indicators of the effectiveness of practice.

**6. NONLINGUISTIC REPRESENTATIONS (pp. 72-83)**

According to research, knowledge is stored in two forms: linguistic and visual (nonlinguistic). The more students use both forms in the classroom, the more opportunity they have to achieve. Recently, use of nonlinguistic representations has proven to not only stimulate but also to increase brain activity.

**7. COOPERATIVE LEARNING (pp. 84-91)**

Research shows that organizing students into cooperative groups yields a positive effect on overall learning. When applying cooperative learning strategies, keep groups small and don’t overuse this strategy—be systematic and consistent in your approach. According to the research, cooperative learning is defined as possessing (1) positive interdependence, i.e., a sense of sink or swim together, (2) face-to-face promotive interaction, i.e., helping each other learn, applauding success and efforts, (3) individual and group accountability, i.e., each of us has to contribute to the group achieving its goal, (4) interpersonal and small group skills, i.e., communication, trust, leadership, decision making, and conflict resolution, and (5) group

processing, i.e., reflecting on how well the team is functioning and how to function even better.

**8. Setting Objectives & Providing Feedback (pp. 92-102)**

Setting objectives can provide students with a direction for their learning. Goals should not be too specific; they should be easily adaptable to students’ own objectives. Research shows that feedback generally produces positive results. Teachers can never give too much; however, they should manage the form that feedback takes.

**9. Generating & Testing Hypotheses (pp. 103-110)**

Research shows that a deductive approach (using a general rule to make a prediction) to this strategy works best. Whether a hypothesis is induced or deduced, students should clearly explain their hypotheses and conclusions. We commonly think of generating and testing hypotheses as the purview of the science teacher only. However, this strategy applies to a variety of tasks that are applicable to many subject areas.

**10. Using Cues, Questions, & Advance Organizers (pp. 111-120)**

Cues, questions, and advance organizers help students use what they already know about a topic to enhance further learning. Research shows that these tools should be highly analytical, should focus on what is important, and are most effective when presented before a learning experience.

[**Thematic Instruction**](http://www.netc.org/focus/strategies/them.php)

Students learn better from thematic, interdisciplinary instruction -- themes are a way of understanding new concepts and provide mental organizing schemes.

[**Simulations and Games**](http://www.netc.org/focus/strategies/simu.php)

Simulation offer unique opportunities to enhance learning and allow students to test knowledge, gain experience, and practice skills

**Thoughtful Ed**

Think, Pair, Share

Give One, Get One

Divergent Thinking

Factstorming

Graffiti

Carousel Brainstorming

Context Connections

Associations

K-W-L

Four Thought

Think of a Time

Hooks and Bridges

Anticipation Guides

Word Banks

Sketch-to-Sketch

Mind’s Eye

Priority Pyramid

Rank Order Ladder

Decision-Making Matrix

Physical Barometer

New American Notebook

Mapping

Etch-A-Sketch

Power Notes

Math Notes

Concept Notemaker

Learning Logs

Kindling

Building Writing

Collaborative Summarizing

4-2-1 Freewrite

Writer’s Club

Visualizing Vocabulary

Deep Processing

Vocabulary Notebook

Tools for Mastering and Deepening Vocabulary

Tools for Practicing Vocabulary

Memory Frameworks

Mnemonics

1.2.3.4

Reflective Writing

Reflective Statements

Reflecting in Style

Questing

Q-Space

Response Techniques

What’s my Question

Questions in Style

Think-Aloud

Four-Phase Practice

Boggle

Panel Discussion

Categories

3-2-1

Mastery Review

Outburst

Poster Session

Group-to-Group teaching

Graphic Organizers

Gallery Walk

Explaining solutions

Surveying

Jeopardy

What? So What? Now What?

Feedback Tools

Comprehension Menus

Rubrics

The C-List

Student-Generated Assessment Criteria

Test Feedback

Cooperative Structures for Promoting Positive Interdependence

Learning Partners

Team-O-Graph

Energizers

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| --- | --- | --- | --- |
| **Differentiated Instruction**  Something for All Learners  Vary Delivery Styles  Support Learning Styles | **Literacy First**  State Objective  Activate Prior Knowledge  Student Active Participation  Teacher Input  Identify Student Success | **DuFor's "Four" Basics**  ***GREAT FOR PLC's***  1) What do we want students to know and be able to do?  2) How do we know they know it?  3) What do we do if they don’t?  4) What do we do if they already know it? | **Ruby Payne's Main Ideas**  Give students tools that keep them from : "being taken advantage of "  "being cheated"  "being controlled" |
| **Kagan's Strategies**  1) Positive Interdependence (everybody gain)  2) Individual Accountability (everyone required)  3) Equal Participation (everyone participating)  4)Simultaneous Interaction (everyone at once) | **Multiple Intelligences** Visual / Spatial  Verbal / Linguistic  Logical / Mathematical  Bodily / Kinesthetic  Musical / Rhythmic  Naturalist | **Breaking Ranks in the Middle**  1) Identify Essential Skills and Align Strategies  2) Recognize Every Stage  3) Provide Smooth Transition  4) Engage Families as Partners  5) Integrate Technology and more... | **MTSS**  Multi-Tiered System of Support.  What will . . . .  1) All students be able to do?  2) Some be able to do?  3) Few be able to do?  Expectations & Challenges for Every Student above or below grade level |
| **Other Strategies?** CSM Supports the Integration of ALL High-Yield Instructional Strategies | | | |